AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (Currently amended) A method for treating a disorder associated with a cellular or tissue structure or the accumulation of an undesirable biological material in a subject comprising administering to the subject one or more magnetic particles, wherein at least one particle localizes at or within the structure or material, and wherein the treatment is carried out by applying a magnetic field generated by an apparatus which comprises a magnetic field generator for generating a magnetic field within the cellular or tissue structure or undesirable biological material and a control system for causing a change in the magnetic field, to induce at least one particle to rotate, to thereby disrupt the structure or material, wherein at least one magnetic particle has intrinsic magnetization, said magnetization being stabilized by inherent magnet crystalline anisotropy and/or by shape anisotropy.

2. (Previously presented) The method of claim 1, wherein the structure is a mammalian cell.

3. (Previously presented) The method of claim 1, wherein the structure is a tumor.

4. (Previously presented) The method of claim 1, wherein at least one particle comprises a targeting moiety.

5. (Previously presented) The method of claim 4, wherein the targeting moiety is an antibody.

6. (Previously presented) The method of claim 5 wherein the antibody is a cell-internalizing antibody.

7. (Previously presented) The method of claim 1, wherein at least one particle comprises a magnetic material with a magneto-crystalline anisotropy of at least 1×10^5 J/m^3.

8. (Previously presented) The method of claim 7, wherein the magnetic material is a rare-earth metal alloy or a crystalline hexaferrite.

9. (Previously presented) The method of claim 1, wherein at least one particle comprises a coating of a bio-compatible material.

10. (Previously presented) The method of claim 7, wherein the magnetic material of at least one particle is of a maximum dimension of from 50 nm to 500 nm.

11. (Previously presented) The method of claim 1, wherein at least one particle has a total maximum dimension not exceeding 200 nm.

12. (Previously presented) The method of claim 1, wherein one or more particles is a shape selected from the group consisting of: substantially cuboid, substantially oblate spheroid and substantially prolate spheroid.

13. (Currently amended) A method for disrupting a material, comprising the steps of:

(i) localizing one or more magnetic particles at or within the material: and

(ii) applying a magnetic field to one magnetic particle, to induce particle rotation and thereby disrupt the material, wherein one magnetic particle has intrinsic magnetization, said magnetization being stabilized by inherent magneto-crystalline anisotropy and/or by shape anisotropy and wherein the applied magnetic field is generated by an apparatus which comprises a magnetic field generator for generating a magnetic field and wherein the direction and/or amplitude with respect to the material is varied over time by the apparatus having a control system for causing a change in the magnetic field.

14. (Previously presented) The method of claim 13, wherein the material is a biological material.

15. (Previously presented) The method of claim 13, wherein the material is a cellular or tissue structure.

16. (Previously presented) The method of claim 13, wherein the material is a mammalian cell.

17. (Previously presented) The method of claim 13, wherein the material is a tumor.

18. (Previously presented) The method of claim 13, wherein the method is performed *in vitro*.

19. (Previously presented) The method of claim 13, wherein at least one particle comprises a targeting moiety.

20. (Previously presented) The method of claim 19, wherein the targeting moiety is an antibody.

21. (Previously presented) The method of claim 20, wherein the antibody is a cell-internalizing antibody.

22. (Previously presented) The method of claim 13, wherein the at least one particle comprises a magnetic material with a magneto-crystalline anisotropy of at least 1×10^5 J/m^3.

23. (Previously presented) The method of claim 22, wherein the magnetic material is a rare-earth metal alloy or a crystalline hexaferrite.

24. (Previously presented) The method of claim 13, wherein at least one particle comprises a coating of a bio-compatible material.

25. (Previously presented) The method of claim 22, wherein the magnetic material of at least one particle is of a maximum dimension of from 50 nm to 500 nm.

26. (Previously presented) The method of claim 13, wherein at least one particle has a total maximum dimension not exceeding 200 nm.

27. (Previously presented) The method of claim 13, wherein one or more particles is a shape selected from the group consisting of: substantially cuboid, substantially oblate spheroid and substantially prolate spheroid.

28. (Previously presented) The method of claim 13, wherein the applied magnetic field has a flux density of from 0.01 to 2 Tesla.

29. (Previously presented) The method of claim 13, wherein the magnetic field variation is continuous.

30. (Previously presented) The method of claim 13, wherein the variation is discontinuous, the magnetic field being repeatedly applied after re-orienting the material.

31. (Previously presented) The method of claim 13, wherein the variation is discontinuous, the magnetic field being repeatedly applied after a predetermined wait period to allow the magnetic axis of at least one particle to take up a random direction as a result of Brownian motion.

32. (Previously presented) The method of claim 13, wherein the variation is achieved by suitably controlling an external magnetic field generator.

33. (Previously presented) The method of claim 13, wherein the field direction is varied at a frequency up to 100 Hz.

34. (Previously presented) The method of claim 13, wherein the variation is achieved by moving the material.

35. (Previously presented) The method of claim 13, wherein the material is rotated at a frequency up to 10 Hz.

36. (Previously presented) The method of claim 13, further comprising obtaining a magnetic resonance image of at least one particle prior to causing movement of at least one particle.

37. (Previously presented) An apparatus for disrupting a material, the apparatus comprising a magnetic field generator for generating a magnetic field in a working volume; one or more magnetic particles localized at or in the material in the working volume, wherein at least one magnetic particle has intrinsic magnetization, said magnetization being stabilized by inherent magneto-crystalline anisotropy and/or by shape anisotropy; and a control system for causing a change in the magnetic field in the working volume with respect to the material so as to rotate the magnetic particle.

38. (Previously presented) The apparatus of claim 37, wherein the control system causes a relative movement between the magnetic field direction and the material.

39. (Previously presented) The apparatus of claim 38, wherein the control system causes a relative rotation between the magnetic field direction and the working volume.

40. (Previously presented) The apparatus of claim 37, wherein the control system is adapted to cause the magnetic field vector in the working volume to change with respect to the material in amplitude or direction or both.

41. (Previously presented) The apparatus of claim 40, wherein the control system is adapted to cause the magnetic field generator to change relative to the material.

42. (Previously presented) The apparatus of claim 37, wherein the control system is adapted to cause the magnetic field generator to pulse the amplitude of the magnetic field in the working volume.

43. (Previously presented) The apparatus of claim 37, wherein the working volume is located externally of the magnetic field generator.

44. (Previously presented) The apparatus of claim 37, wherein the magnetic field generator comprises one or more electromagnets.

45. (Previously presented) The apparatus of claim 44, wherein at least one electromagnet is fabricated from a high temperature superconductor.

46. (Previously presented) The apparatus of claim 37, wherein the magnetic field generated by the magnetic field generator has a field strength in the range 0.01 to 2 Tesla.

47. (Previously presented) The apparatus of claim 37, wherein at least one particle comprises a targeting moiety.

48. (Previously presented) The apparatus of claim 47, wherein the targeting moiety is an antibody.

49. (Previously presented) The apparatus of claim 48, wherein the antibody is a cell-internalizing antibody.

50. (Previously presented) The apparatus of claim 37, wherein at least one particle comprises a magnetic material with a magneto-crystalline anisotropy of at least 1×10^5 J/m^3.

51. (Previously presented) The apparatus of claim 50, wherein the magnetic material

is a rare-earth metal alloy or a crystalline hexaferrite.

52. (Previously presented) The apparatus of claim 37, wherein at least one particle comprises a coating of a bio-compatible material.

53. (Previously presented) The apparatus of claim 50, wherein the magnetic material of at least one particle is of a maximum dimension of from 50 nm to 500 nm.

54. (Previously presented) The apparatus of claim 37, wherein at least one particle has a total maximum dimension not exceeding 200 nm.

55. (Previously presented) The apparatus of claim 37, wherein one or more particles is a shape selected from the group consisting of: substantially cuboid, substantially oblate spheroid and substantially prolate spheroid.

56 - 65. (Cancelled)

66. (Previously presented) The method of claim 1, wherein the particle is to be rotated to exert a force of at least 100 pN.

67. (Previously presented) The method of claim 13, wherein the particle is to be rotated to exert a force of at least 100 pN.